

# INTERNATIONAL SEARCH REPORT

/US2004/030743

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|--|--|---|
| <b>A. CLASSIFICATION OF SUBJECT MATTER</b><br>IPC 7 C07D471/04 C07D513/04 A61K31/4985 A61K31/437 A61K31/4375<br>A61K31/4365 A61K31/53 A61K31/519 A61P31/18 C07F9/02  |  |   |
| According to International Patent Classification (IPC) or to both national classification and IPC  |  |   |
| <b>B. FIELDS SEARCHED</b><br>Minimum documentation searched (classification system followed by classification symbols)<br>IPC 7 C07D A61K A61P C07F  |  |   |
| Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched  |  |   |
| Electronic data base consulted during the international search (name of data base and, where practical, search terms used)<br>EPO-Internal, WPI Data, PAJ, BEILSTEIN Data, CHEM ABS Data   |  |   |
| <b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>  |  |   |
| Category *   | Citation of document, with indication, where appropriate, of the relevant passages   | Relevant to claim No.   |
| P,X  | WO 2004/035576 A2 (GILEAD SCIENCES, INC;<br>CHEN, JAMES, M; CHEN, XIAOWU; FARDIS,<br>MARIA; JIN) 29 April 2004 (2004-04-29)<br>claims 47,48  | 1-65  |
| P,Y  | WO 03/077850 A2 (MERCK & CO., INC;<br>EGBERTSON, MELISSA; LANGFORD, H. MARIE;<br>MELAMED, JEF)<br>25 September 2003 (2003-09-25)<br>page 3 - page 5                                    | 1-65  |
| Y  | WO 03/016315 A1 (MERCK & CO., INC;<br>ANTHONY, NEVILLE, J; XU, WEI; LEPORE,<br>JOHN, V; MAHAJ)<br>27 February 2003 (2003-02-27)<br>cited in the application<br>page 1 - page 2; claims | 1-65  |
| -/--   |  |   |
| <div style="display: flex; justify-content: space-between;"> <span><input checked="" type="checkbox"/> Further documents are listed in the continuation of box C.</span> <span><input checked="" type="checkbox"/> Patent family members are listed in annex.</span> </div>  |  |   |
| <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>* Special categories of cited documents :</p> <p>*A* document defining the general state of the art which is not considered to be of particular relevance</p> <p>*E* earlier document but published on or after the international filing date</p> <p>*L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>*O* document referring to an oral disclosure, use, exhibition or other means</p> <p>*P* document published prior to the international filing date but later than the priority date claimed</p> </div> <div style="width: 45%;"> <p>*T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>*X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone</p> <p>*Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.</p> <p>* &amp; * document member of the same patent family</p> </div> </div> |  |   |
| Date of the actual completion of the international search<br><div style="text-align: center;">28 January 2005</div>  |  | Date of mailing of the international search report<br><div style="text-align: center;">14/02/2005</div> |
| Name and mailing address of the ISA<br>European Patent Office, P.B. 5818 Patentlaan 2<br>NL - 2280 HV Rijswijk<br>Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,<br>Fax: (+31-70) 340-3016   |  | Authorized officer<br><div style="text-align: center;">Fazzi, R</div>                                   |

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| C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT |  |                       |
|--|--|-----------------------|
| Category *   | Citation of document, with indication, where appropriate, of the relevant passages   | Relevant to claim No. |
| Y  | WO 02/055079 A2 (MERCK & CO., INC;<br>ANTHONY, NEVILLE, J; GOMEZ, ROBERT, P;<br>BENNETT, JENN) 18 July 2002 (2002-07-18)<br>cited in the application<br>claims   | 1-65                  |
| Y  | WO 02/30426 A1 (MERCK & CO., INC; ANTHONY,<br>NEVILLE, J; GOMEZ, ROBERT, P; BENNETT,<br>JENN) 18 April 2002 (2002-04-18)<br>cited in the application<br>claim 1; examples  | 1-65                  |
| Y  | WO 91/19721 A1 (GLAZIER, ARNOLD)<br>26 December 1991 (1991-12-26)<br>cited in the application<br>claims; examples  | 1-65                  |
| Y  | KHAMNEI S. ET AL.: "Neighboring Group<br>Catalysis in the Design of Nucleotide<br>Prodrugs"<br>J. MED. CHEM.,<br>vol. 39, 1996, pages 4109-4115,<br>XP002315516<br>cited in the application<br>page 4109 - page 4110   | 1-65                  |
| Y  | LOMBAERT S DE ET AL: "PHOSPHONOMETHYL<br>DIPEPTIDES AND THEIR PHOSPHONATE PRODRUGS,<br>A NEW GENERATION OF NEUTRAL ENDOPEPTIDASE<br>(NEP, EC 3.4.24.11) INHIBITORS1"<br>JOURNAL OF MEDICINAL CHEMISTRY, AMERICAN<br>CHEMICAL SOCIETY. WASHINGTON, US,<br>vol. 37, no. 4,<br>18 February 1994 (1994-02-18), pages<br>498-511, XP000564486<br>ISSN: 0022-2623<br>cited in the application<br>figures; tables | 1-65                  |

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PCT/US2004/030743

## Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☒ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:  
  
Although claims 64-65 are directed to a method of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.
2. ☐ Claims Nos.:  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this International application, as follows:

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

# INTERNATIONAL SEARCH REPORT

Information on patent family members

US2004/030743

| Patent document<br>cited in search report | Publication<br>date | Patent family<br>member(s)   | Publication<br>date  |
|---|---------------------|--|--|
| WO 2004035576 A2                          | 29-04-2004          | WO 2004035577 A2<br>US 2004167124 A1<br>US 2004157804 A1   | 29-04-2004<br>26-08-2004<br>12-08-2004   |
| WO 03077850 A2                            | 25-09-2003          | CA 2478310 A1<br>EP 1496836 A2<br>WO 03077857 A2   | 25-09-2003<br>19-01-2005<br>25-09-2003   |
| WO 03016315 A1                            | 27-02-2003          | CA 2456206 A1<br>EP 1430058 A1<br>US 2003119823 A1   | 27-02-2003<br>23-06-2004<br>26-06-2003   |
| WO 02055079 A2                            | 18-07-2002          | CA 2425625 A1<br>EP 1326610 A2<br>JP 2004517860 T<br>US 2004044207 A1  | 18-07-2002<br>16-07-2003<br>17-06-2004<br>04-03-2004   |
| WO 0230426 A1                             | 18-04-2002          | AU 1532802 A<br>CA 2425395 A1<br>EP 1326611 A1<br>JP 2004510819 T  | 22-04-2002<br>18-04-2002<br>16-07-2003<br>08-04-2004   |
| WO 9119721 A1                             | 26-12-1991          | AT 131825 T<br>AU 651835 B2<br>AU 8102491 A<br>CA 2083386 A1<br>DE 69115694 D1<br>DE 69115694 T2<br>DK 533833 T3<br>EP 0533833 A1<br>ES 2083580 T3<br>GR 3019284 T3<br>JP 3347723 B2<br>JP 5507938 T<br>US 6140310 A<br>US 5627165 A<br>US 5789608 A | 15-01-1996<br>04-08-1994<br>07-01-1992<br>14-12-1991<br>01-02-1996<br>17-10-1996<br>22-04-1996<br>31-03-1993<br>16-04-1996<br>30-06-1996<br>20-11-2002<br>11-11-1993<br>31-10-2000<br>06-05-1997<br>04-08-1998 |